

We claim:

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- 1. A high efficacy stick antiperspirant/deodorant free of added stearyl alcohol and comprising in weight percent based on the total weight of the composition:
  - (a) 30-70% volatile cyclomethicone;
  - (b) 10-25% of an antiperspirant active;

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- (c) 1-15% of an emollient;
- (d) 1-14% of polyethylene comprising one or more members selected from the group consisting of homopolymers and copolymers of polyethylene wherein the polyethylene (i) is at least 90% linear; (ii) has a molecular weight in the range of 300-3000; (iii) has a melting point in the range of 50-129 degrees C; and (iv) has a polymer backbone of CH<sub>3</sub>CH<sub>2</sub>-(CH<sub>2</sub>-CH<sub>2</sub>)<sub>n</sub>-CH<sub>2</sub>-CH<sub>3</sub>, where n is an average number and is selected to be in the range of 10-106; and

(e) 0.3-7% of a wax as a co-gellant with the polyethylene wherein the wax has a melting point in the range of 40-97 degrees C;

- provided that the ratio of wax:polyethylene is in the range of 1:1-1:10.
  - 2. A stick as claimed in Claim 1 comprising 40-50% of a volatile silicone.
- 3. A stick as claimed in Claim 1 wherein the emollient comprises a mixture of two or more emollients.
  - 4. A stick as claimed in Claim 1 comprising 3-12 % emollient.
- 5. A stick as claimed in Claim 1 wherein the emollient comprises a non-volatile 30 silicone.
  - 6. A stick as claimed in Claim 5 wherein the emollient comprises a 10-350 centistoke dimethicone.
- 35 7. A stick as claimed in Claim 1 wherein the emollient is a member of the group consisting of
  - (a) <u>fats and oils</u> represented by Formula III:





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CH<sub>2</sub>-COOR<sup>1</sup>
|
CH-COOR<sup>2</sup>
|
CH<sub>2</sub>-COOR<sup>3</sup>

Formula III

wherein each of  $R^1$ ,  $R^2$ , and  $R^3$  may be the same or different and have a carbon chain length (saturated or unsaturated) of 7 to 30;

- (b) <u>hydrocarbons</u> selected from the group consisting of paraffin, petrolatum, hydrogenated polyisobutene, and mineral oil;
  - (c) <u>esters</u> of general structure would be R<sup>4</sup>CO-OR<sup>5</sup> wherein the chain length for R<sup>4</sup> and R<sup>5</sup> hydrocarbon groups is in the range of 7-30 and can be saturated or unsaturated, straight chained or branched;
- (d) <u>saturated and unsaturated fatty acids</u> which have general structure R<sup>6</sup>COOH with the R<sup>6</sup> group being a straight chain hydrocarbon with a carbon chain length between 7-10;
- (e) <u>saturated and unsaturated fatty alcohols</u> which have a general structure R<sup>7</sup>COH where R<sup>7</sup> is a straight chain hydrocarbon with a carbon length of 7 to 10;
- (f) <u>lanolin and its derivatives</u> selected from the group consisting of lanolin, lanolin oil, lanolin wax, lanolin alcohols, lanolin fatty acids, isopropyl lanolate, ethoxylated lanolin and acetylated lanolin alcohols;
- (g) <u>alkoxylated alcohols</u> wherein the alcohol portion is selected from aliphatic alcohols having 2-18 carbons, and the alkylene oxide portion is selected from the group consisting of ethylene oxide, and propylene oxide having a number of alkylene oxide units from 2-53;
- (h) <u>silicones</u> as the linear organo-substituted polysiloxanes which are polymers of silicon/oxygen with general structure:
  - (1)  $(R^{10})_3 SiO(Si~(R^{11})_2 O)_x Si(R^{12})_3$  where  $R^{10}$ ,  $R^{11}$  and  $R^{12}$  can be the same or different and are each independently selected from the group consisting of phenyl and C1-C60 alkyl; or
  - (2) HO(R<sup>14</sup>)<sub>2</sub>SiO(Si (R<sup>15</sup>)<sub>2</sub>O)<sub>x</sub>Si(R<sup>16</sup>)<sub>2</sub>OH, where R<sup>14</sup>, R<sup>15</sup> and R<sup>16</sup> can be the same or different and are each independently selected from the group consisting of phenyl and C1-C60 alkyl; and
  - (i) mixtures and blends of two or more of the foregoing.
- 8. A stick as claimed in Claim 1 comprising 3-10% polyethylene.



- 9. A stick as claimed in Claim 1 wherein the polyethylene has a melting point in the range of 50-70 degrees C.
- 10. A stick as claimed in Claim 1 wherein the polyethylene has a melting point in
  5 the range of 60-70 degrees C.
  - 11. A stick as claimed in Claim 1 wherein the polyethylene has a melting point in the range of 70-129 C.
- 10 11. A stick as claimed in Claim 1 wherein the wax has a melting point in the range of 40-80 degrees C.
  - 13. A stick as claimed in Claim 1 wherein the wax is a microcrystalline wax having a melting point in the range of 60-97 degrees C.
  - 14. A stick as claimed in Claim 1 additionally comprising an effective amount of an antimicrobial agent.

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